

Chapter 20.80 Critical Areas

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20.80.010 Purpose.

- A. The purpose of this chapter is to establish supplemental standards for the protection of critical areas in compliance with the provisions of the Washington Growth Management Act of 1990 (Chapter 36.70A RCW) and consistent with the goals and policies of the Shoreline Comprehensive Plan in accordance with the procedures of Chapter 20.30 SMC.
- B. By identifying and regulating development and alterations to critical areas and their buffers, it is the intent of this chapter to:
 - 1. Protect the public from injury, loss of life, property damage or financial losses due to flooding, erosion, landslide, seismic events, soils subsidence or steep slope failure;
 - 2. Protect unique, fragile and valuable elements of the environment;
 - 3. Reduce cumulative adverse environmental impacts to water quality, wetlands, streams and other aquatic resources, fish and wildlife habitat, steep slopes and geologically unstable features;
 - 4. Meet the requirements of the National Flood Insurance Program and maintain the City of Shoreline as an eligible community for Federal flood insurance benefits;
 - 5. Ensure the long-term protection of ground and surface water quality;
 - 6. Alert members of the public, including appraisers, assessors, owners, potential buyers, or lessees, to the development limitations of critical areas and their required buffers;
 - 7. Serve as a basis for exercise of the City's substantive authority under the State Environmental Policy Act (SEPA) and the City's Environmental Procedures (Chapter 20.30 SMC, Subchapter 8); and comply with the requirements of the Growth Management Act (Chapter 36.70A RCW) and its implementing rules;
 - 8. Establish standards and procedures that are intended to protect environmentally critical areas while accommodating the rights of property owners to use their property in a reasonable manner; and
 - 9. Provide for the management of critical areas to maintain their functions and values and to restore degraded ecosystems. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(A), 2000).

20.80.020 Critical areas maps.

- A. The approximate location and extent of identified critical areas within the City's planning area are shown on the critical areas maps adopted as part of this chapter. These maps shall be used for informational purposes only to assist property owners and other interested parties. Boundaries and locations indicated on the maps are generalized. Critical areas and their buffers may occur within the City which have not previously been mapped.

- B. The actual presence or absence, type, extent, boundaries, and classification of critical areas shall be identified in the field by a qualified professional, and determined by the City, according to the procedures, definitions and criteria established by this chapter. In the event of any conflict between the critical area location or designation shown on the City's maps and the criteria or standards of this chapter, the criteria and standards shall prevail.
- C. The critical areas maps shall be periodically updated by the City and shall reflect any permit activity, results of special studies and reports reviewed and approved by the City, amendments to the Comprehensive Plan Environmental Element and Department identified errors and corrections. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(D), 2000. Formerly 20.80.040.).

20.80.025 Applicability.

- A. Unless explicitly exempted, the provisions of this chapter shall apply to all land uses and within all zoning designations in the City of Shoreline. All persons within the City shall comply with the requirements of this chapter.
- B. The City shall not approve any permit or otherwise issue any authorization to alter the condition of any land, water or vegetation or to construct or alter any structure or improvement without first assuring compliance with the requirements of this chapter.
- C. Approval of a development proposal pursuant to the provisions of this chapter does not discharge the obligation of the applicant to comply with the provisions of this chapter.
- D. The provisions of this chapter shall apply to any forest practices over which the City has jurisdiction pursuant to Chapter 76.09 RCW and WAC Title 222. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(E), 2000. Formerly 20.80.050.).

20.80.030 Exemptions.

The following activities shall be exempt from the provisions of this chapter:

- A. Alterations in response to emergencies which threaten the public health, safety and welfare or which pose an imminent risk of damage to private property as long as any alteration undertaken pursuant to this subsection is reported to the City as soon as possible. Only the minimum intervention necessary to reduce the risk to public health, safety, or welfare and/or the imminent risk of damage to private property shall be authorized by this exemption. The City shall confirm that an emergency exists and determine what, if any, additional applications and/or measures shall be required to protect the environment consistent with the provisions of this chapter, and to repair any damage to a preexisting resource;
- B. Public water, electric and natural gas distribution, public sewer collection, cable communications, telephone, utility and related activities undertaken pursuant to City-approved best management practices, and best available science with regard to protection of threatened and endangered species, as follows:
 - 1. Normal and routine maintenance or repair of existing utility structures or rights-of-way;
 - 2. Relocation of electric facilities, lines, equipment or appurtenances, not including substations, with an associated voltage of 55,000 volts or less, only when required by the City of Shoreline, which approves the new location of the facilities;
 - 3. Replacement, operation, repair, modification or installation or construction in an improved City road right-of-way or City-authorized private roadway of all electric facilities, lines, equipment or appurtenances, not including substations, with an associated voltage of 55,000 volts or less;
 - 4. Relocation of public sewer local collection, public water local distribution, natural gas, cable communication or telephone facilities, lines, pipes, mains, equipment or appurtenances, only when required by the City of Shoreline, which approves the new location of the facilities; and

5. Replacement, operation, repair, modification, relocation, installation or construction of public sewer local collection, public water local distribution, natural gas, cable communication or telephone facilities, lines, pipes, mains, equipment or appurtenances when such facilities are located within an improved public right-of-way or City-authorized private roadway;
- C. Maintenance, operation, repair, modification or replacement of publicly improved roadways and associated stormwater drainage systems as long as any such alteration does not involve the expansion of roadways or related improvements into previously unimproved rights-of-way or portions of rights-of-way;
- D. Maintenance, operation or repair of publicly improved recreation areas as long as any such activity does not involve the expansion of uses and/or facilities into a previously unimproved portion of a preexisting area. Maintenance, operation and repair of publicly improved recreation areas within designated fish and wildlife habitat areas shall be permitted if all activities are performed consistent with the development standards of this chapter, best available science or adaptive management plans as recognized by the City;
- E. Activities affecting isolated Type IV wetlands which are individually smaller than 1,000 square feet;
- F. Activities occurring in areas which may be considered small steep slopes (areas of 40 percent slope or greater with a vertical elevation change of up to, but not greater than 20 feet), such as berms, retaining walls, excavations and small natural slopes, and activities on steep slopes created through prior legal grading activity may be exempted based upon City review of a soils report prepared by a qualified geologist or geotechnical engineer which demonstrates that no adverse impact will result from the exemption;
- G. Minor conservation and enhancement of critical areas that does not alter the location, dimensions or size of the critical area or buffer, and results in improvement of the critical area functions;
- H. Removal of hazardous trees in accordance with SMC [20.50.310\(A\)\(1\)](#);
- I. Site investigative work and studies necessary for preparing land use applications, including soils tests, water quality studies, wildlife studies and similar tests and investigations; provided, that any disturbance of the critical area shall be the minimum necessary to carry out the work or studies;
- J. When it can be demonstrated that there will be no undue adverse effect, the following activities may be allowed within critical areas and their buffers: educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, bird watching, public beach access including water recreation-related activities, bicycling and hiking, that will not have an undue adverse effect on the critical area;
- K. Normal and routine maintenance and operation of existing landscaping and gardens, provided they comply with all other regulations in this chapter;
- L. Minor activities not mentioned above and determined by the City to have minimal impacts to a critical area;
- M. Notwithstanding the exemptions provided by this section, any otherwise exempt activities occurring in or near a critical area should meet the purpose and intent of SMC 20.80.010 and should consider on-site alternatives that avoid or minimize impacts; and
- N. Mitigation projects related to utilities construction in critical areas or their buffers. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(G), 2000. Formerly 20.80.070.).

20.80.040 Partial exemptions.

- A. The following are exempt from the provisions of this chapter except for the notice to title provisions and the flood hazard area provisions, if applicable.
 1. Structural modification of, addition to, or replacement of structures, except single detached residences, in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification,

- addition, replacement or related activity does not increase the existing building footprint of the structure lying within the above-described building setback area, sensitive area or buffer;
2. Structural modification of, addition to, or replacement of single detached residences in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification, addition, replacement or related activity does not increase the existing footprint of the residence lying within the above-described buffer or building setback area by more than 750 square feet over that existing before November 27, 1990, and no portion of the modification, addition or replacement is located closer to the critical area or, if the existing residence is within the critical area, extend farther into the critical area; and
 3. Maintenance or repair of structures which do not meet the development standards of this chapter for landslide or seismic areas if the maintenance or repair does not increase the footprint of the structure and there is no increased risk to life or property as a result of the proposed maintenance or repair.
- B. A permit or approval sought as part of a development proposal for which multiple permits are required is exempt from the provisions of this chapter, except for the notice to title provisions, as applicable if:
1. The City of Shoreline has previously reviewed all critical areas on the site; and
 2. There is no material change in the development proposal since the prior review; and
 3. There is no new information available which may alter previous critical area review of the site or a particular critical area; and
 4. The permit or approval under which the prior review was conducted has not expired or, if no expiration date, no more than five years have lapsed since the issuance of that permit or approval; and
 5. The prior permit or approval, including any conditions, has been complied with. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(H), 2000. Formerly 20.80.080.).

20.80.045 Relationship to other regulations.

- A. These critical area regulations shall apply as an overlay and in addition to zoning, land use and other regulations established by the City of Shoreline. In the event of any conflict between these regulations and any other regulations of the City, the regulations which provide greater protection to the environmentally critical areas shall apply.
- B. Areas characterized by particular critical areas may also be subject to other regulations established by this chapter due to the overlap or multiple functions of some critical areas. Wetlands, for example, may be defined and regulated according to the provisions for fish and wildlife habitat conservation areas contained in this chapter, as well as provisions regulating wetlands. In the event of any conflict between regulations for particular critical areas in this chapter, the regulations which provide greater protection to environmentally critical areas shall apply. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(K), 2000. Formerly 20.80.110.).

20.80.050 Notice to title.

- A. To inform subsequent purchasers of real property of the existence of critical areas, when development is permitted in an identified critical area or its associated buffer, a notice to title applicable to the property shall be filed with the King County Department of Records. The notice shall state that critical areas or buffers have been identified on the property and the fact that limitations on actions in or affecting the critical area or buffer may exist. The notice shall run with the land. This notice shall not be required for development by a public agency or public or private utility when:

1. Within a recorded easement or right-of-way; or
 2. On the site of a permanent public facility.
- B. Subdivisions, short subdivisions, development agreements, and binding site plans shall establish a separate tract (a critical areas tract) as a permanent protective measure for wetlands, streams, fish and wildlife habitat, landslide hazard areas and their buffers. The plat or binding site plan for the project shall clearly depict the critical areas tract, and shall include all of the subject critical area and any required buffer, as well as additional lands, as determined by the developer. Restrictions to development within the critical area tract shall be clearly noted on the plat or plan. Restrictions shall be consistent with this chapter for the entire critical area tract, including any additional areas included voluntarily by the developer. Should the critical area tract include several types of critical areas, the developer may wish to establish separate critical areas tracts. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(M), 2000. Formerly 20.80.130.).

20.80.060 Permanent field marking.

- A. All critical areas tracts, easements or dedications shall be clearly marked on the site using permanent markings, placed every 300 feet, which include the following text:
- This area has been identified as a <<INSERT TYPE OF CRITICAL AREA>> by the City of Shoreline. Activities, including clearing and grading, removal of vegetation, pruning, cutting of trees or shrubs, planting of nonnative species, and other alterations may be prohibited. Please contact the City of Shoreline Department of Development (206) 546-1811 for further information.
- B. It is the responsibility of the landowner to maintain and replace if necessary all permanent field markings. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(N), 2000. Formerly 20.80.140.).

20.80.070 Alteration of critical areas.

Alteration of critical areas, including their established buffers, may only be permitted subject to the criteria in this chapter, and compliance with any Federal and/or State permits required. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(A), 2000. Formerly 20.80.160.).

20.80.080 Alteration or development of critical areas – Standards and criteria.

This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall avoid, minimize and mitigate the impacts to the critical areas through actions that occur in the following sequence:

- A. Avoiding the impact altogether by not taking a certain action or parts of actions;
- B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- D. Reducing or eliminating the impact over time through preservation and maintenance operations during the life of the action;
- E. Compensating for the impact by replacing or providing substitute resources or environments; and/or
- F. Monitoring, measuring and reporting the impact to the Planning Director and taking appropriate corrective measures. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(B), 2000. Formerly 20.80.170.).

20.80.085 Pesticides, herbicides and fertilizers on City-owned property.

Pesticides, herbicides and fertilizers which have been identified by State or Federal agencies as harmful to humans, wildlife, or fish, shall not be used in a City-owned riparian corridor, shoreline habitat or its buffer, wetland or its buffer, except as allowed by the Director for the following circumstances:

- A. When the Director determines that an emergency situation exists where there is a serious threat to public safety, health, or the environment and that an otherwise prohibited application must be used as a last resort.
- B. Compost or fertilizer may be used for native plant revegetation projects in any location. (Ord. 398 § 1, 2006)

20.80.090 Buffer areas.

The establishment of buffer areas shall be required for all development proposals and activities in or adjacent to critical areas. In all cases the standard buffer (i.e., the maximum buffer required by the City) shall apply unless the Director determines that no net loss of functions and values will occur. The purpose of the buffer shall be to protect the integrity, function, value and resource of the subject critical area, and/or to protect life, property and resources from risks associated with development on unstable or critical lands. Buffers shall consist of an undisturbed area of native vegetation established to achieve the purpose of the buffer. If the buffer area has previously been disturbed, it shall be revegetated pursuant to an approved planting plan. Buffers shall be protected during construction by placement of a temporary barricade if determined necessary by the City, on-site notice for construction crews of the presence of the critical area, and implementation of appropriate erosion and sedimentation controls. Restrictive covenants or conservation easements may be required to preserve and protect buffer areas. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(C), 2000. Formerly 20.80.180.).

20.80.100 Classification and rating of critical areas.

To promote consistent application of the standards and requirements of this chapter, critical areas within the City of Shoreline shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance. Classification of critical areas shall be determined by the City using the following tools:

- A. Application of the criteria contained in these regulations;
- B. Consideration of the technical reports submitted by qualified professionals in connection with applications subject to these regulations; and
- C. Review of maps adopted pursuant to this chapter. (Ord. 398 § 1, 2006; Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(E), 2000. Formerly 20.80.200.).

20.80.110 Critical areas reports required.

If uses, activities or developments are proposed within critical areas or their buffers, an applicant shall provide site-specific information and analysis as determined by the City. The site-specific information must be obtained by expert investigation and analysis. This provision is not intended to expand or limit an applicant's other obligations under WAC 197-11-100. Such site-specific reviews shall be performed by qualified professionals, as defined by SMC [20.20.042](#), who are approved by the City or under contract to the City. (Ord. 581 § 1 (Exh. 1), 2010; Ord. 515 § 1, 2008; Ord. 406 § 1, 2006; Ord. 398 § 1, 2006).

20.80.210 Designation and purpose.

- A. Geologic hazard areas are those lands that are affected by natural processes that make them susceptible to geologic events, such as landslides, seismic activity and severe erosion, especially bluff and ravine areas and steep slopes. Areas susceptible to one or more of the following types of hazards shall be designated as geologically hazardous areas:
 - 1. Erosion hazard;
 - 2. Landslide hazard;
 - 3. Seismic hazard.

- B. The primary purpose of geologic hazard area regulations is to avoid and minimize potential impacts to life and property from geologic hazards, conserve soil resources, and minimize structural damage relating to seismic hazards. This purpose shall be accomplished through appropriate levels of study and analysis, application of sound engineering principles, and regulation or limitation of land uses, including maintenance of existing native vegetation, regulation of clearing and grading activities, and control of stormwater. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 3(A), 2000).

20.80.220 Classification.

Geologic hazard areas shall be classified according to the criteria in this section as follows:

- A. Landslide Hazard Areas. Landslide hazard areas are classified as follows:
1. Moderate Hazard: Areas with slopes between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till.
 2. High Hazard: Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay.
 3. Very High Hazard: Areas with slopes steeper than 15 percent with zones of emergent water (e.g., springs or ground water seepage), areas of landslide deposits regardless of slope, and all steep slope hazard areas sloping 40 percent or steeper.
- B. Seismic Hazard Areas. Seismic hazard areas are lands that, due to a combination of soil and ground water conditions, are subject to severe risk of ground shaking, subsidence or liquefaction of soils during earthquakes. These areas are typically underlain by soft or loose saturated soils (such as alluvium) and have a shallow ground water table.
- C. Erosion and Sedimentation Hazards. Erosion hazard areas are lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resources Conservation Service (formerly the Soil Conservation Service) as having “severe” or “very severe” erosion hazards. This includes, but is not limited to, the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood gravelly sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD) and Indianola (InD). (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 3(B), 2000).

20.80.230 Required buffer areas.

- A. Required buffer widths for geologic hazard areas shall reflect the sensitivity of the hazard area and the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the area.
- B. In determining the appropriate buffer width, the City shall consider the recommendations contained in a geotechnical report required by these regulations and prepared by a qualified consultant.
- C. For landslide hazard areas, the standard buffer shall be 50 feet from all edges of the landslide hazard area. Larger buffers may be required as needed to eliminate or minimize the risk to people and property based on a geotechnical report prepared by a qualified professional.
- D. Landslide hazard area buffers may be reduced to a minimum of 15 feet when technical studies demonstrate that the reduction will not increase the risk of the hazard to people or property on- or off-site.
- E. Landslide hazard areas and their associated buffers shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical landslide hazard and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records and Elections. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 3(C), 2000).

20.80.240 Alteration.

- A. The City shall approve, condition or deny proposals in a geologic hazard area as appropriate based upon the effective mitigation of risks posed to property, health and safety. The objective of mitigation measures shall be to render a site containing a geologic hazard as safe as one not containing such hazard. Conditions may include limitations of proposed uses, modification of density, alteration of site layout and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated to eliminate a significant risk to public health, safety and property, or important natural resources, the proposal shall be denied.
- B. Very High Landslide Hazard Areas. Development shall be prohibited in very high landslide hazards areas or their buffers except as granted by a critical areas special use permit or a critical areas reasonable use permit.
- C. Moderate and High Landslide Hazards. Alterations proposed to moderate and high landslide hazards or their buffers shall be evaluated by a qualified professional through the preparation of the geotechnical report. However, for proposals that include no development, construction, or impervious surfaces, the City, in its sole discretion, may waive the requirement for a geotechnical report. The recommendations contained within the geotechnical report shall be incorporated into the alteration of the landslide hazard area or their buffers.

The geotechnical engineer and/or geologist preparing the report shall provide assurances that the risk of damage from the proposal, both on-site and off-site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential landslide hazard, and that measures to eliminate or reduce risks have been incorporated into the report's recommendations.
- D. Seismic Hazard Areas.
 - 1. For one-story and two-story residential structures, a qualified professional shall conduct an evaluation of site response and liquefaction potential based on the performance of similar structures with similar foundation conditions; or
 - 2. For all other proposals, the applicant shall conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to determine the site coefficient for use in the static lateral force procedure described in the Uniform Building Code.
- E. Erosion Hazard Areas.
 - 1. Up to 1,500 square feet may be cleared on any lot in an erosion hazard area without a permit, unless the site also contains another type of critical area or any other threshold contained in SMC [20.50.320](#) would be exceeded.
 - 2. All development proposals on sites containing erosion hazard areas shall include a temporary erosion and sediment control plan consistent with the requirements of the adopted surface water design manual and a revegetation plan to ensure permanent stabilization of the site. Specific requirements for revegetation plans shall be determined on a case-by-case basis during permit review and administrative guidelines shall be developed by the Department. Critical area revegetation plans may be combined with required landscape, tree retention, and/or other critical area mitigation plans as appropriate.
 - 3. All subdivisions, short subdivisions or binding site plans on sites with erosion hazard areas shall comply with the following additional requirements:
 - a. Except as provided in this section, existing vegetation shall be retained on all lots until building permits are approved for development on individual lots;
 - b. If any vegetation on the lots is damaged or removed during construction of the subdivision infrastructure, the applicant shall be required to implement the revegetation plan in those areas that have been impacted prior to final inspection of the site development permit or the issuance of any building permit for the subject property;

- c. Clearing of vegetation on individual lots may be allowed prior to building permit approval if the City of Shoreline determines that:
 - i. Such clearing is a necessary part of a large scale grading plan,
 - ii. It is not feasible to perform such grading on an individual lot basis, and
 - iii. Drainage from the graded area will meet water quality standards to be established by administrative rules.
4. Where the City of Shoreline determines that erosion from a development site poses a significant risk of damage to downstream receiving water, the applicant shall be required to provide regular monitoring of surface water discharge from the site. If the project does not meet water quality standards established by law or administrative rules, the City may suspend further development work on the site until such standards are met.
5. The City may require additional mitigation measures in erosion hazard areas, including, but not limited to, the restriction of major soil-disturbing activities associated with site development between October 15th and April 15th to meet the stated purpose contained in SMC [20.80.010](#) and [20.80.210](#).
6. The use of hazardous substances, pesticides and fertilizers in erosion hazard areas may be prohibited by the City of Shoreline. (Ord. 398 § 1, 2006; Ord. 352 § 1, 2004; Ord. 324 § 1, 2003; Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 3(D), 2000).

20.80.250 Mitigation performance standards and requirements.

The following performance standards shall apply to any mitigations for development proposed within geologic hazard areas located within the City:

- A. Relevant performance standards from SMC [20.80.080](#), [20.80.300](#), [20.80.350](#) and [20.80.500](#) as determined by the City, shall be incorporated into mitigation plans.
- B. The following additional performance standards shall be reflected in proposals within geologic hazard areas:
 1. Geotechnical studies shall be prepared by a qualified consultant to identify and evaluate potential hazards and to formulate mitigation measures.
 2. Construction methods will reduce or not adversely affect geologic hazards.
 3. Site planning should minimize disruption of existing topography and natural vegetation.
 4. Impervious surface coverage should be minimized.
 5. Disturbed areas should be replanted as soon as feasible pursuant to an approved landscape plan.
 6. Clearing and grading regulations as set forth by the City shall be followed.
 7. The use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded slopes.
 8. Temporary erosion and sedimentation controls, pursuant to an approved plan, shall be implemented during construction.
 9. Undevelopable geologic hazard areas larger than one-half acre shall be placed in a separate tract, provided this requirement does not make the lot nonconforming.
 10. A monitoring program shall be prepared for construction activities permitted in geologic hazard areas.
 11. A bond, guarantee or other assurance device approved by the City shall be posted to cover the cost of monitoring, maintenance and any necessary corrective actions.
 12. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 3(E), 2000).

20.80.260 Designation and purpose.

- A. Fish and wildlife habitat conservation areas include nesting and breeding grounds for State and Federal threatened, endangered, critical or priority species listed by the Washington State Department of Fish and Wildlife, including corridors which connect priority habitat, and those areas which provide habitat for species of local significance which have been or may be identified in the City of Shoreline Comprehensive Plan.
- B. The purpose of fish and wildlife habitat conservation areas shall be to provide opportunities for food, cover, nesting, breeding and movement for fish and wildlife within the City; maintain and promote diversity of species and habitat within the City; coordinate habitat protection with elements of the City's established open space corridors wherever possible; help to maintain air and water quality; control erosion; provide areas for recreation, education and scientific study and aesthetic appreciation; and contribute to the established character of the City.
- C. The City of Shoreline has given special consideration to the identification and regulation of fish and wildlife habitat conservation areas that support anadromous fisheries in order to preserve and enhance species which are or may be listed as endangered, threatened or priority species by State and Federal agencies. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 4(A), 2000).

20.80.270 Classification.

- A. Fish and wildlife habitat conservation areas are those areas designated by the City based on review of the best available science; input from Washington Department of Fish and Wildlife, Washington Department of Ecology, and other agencies; and any of the following criteria:
 - 1. The presence of species proposed or listed by the Federal government or the State of Washington as endangered, threatened, critical, or priority; or
 - 2. The presence of heron rookeries or raptor nesting trees; or
 - 3. Streams and wetlands and their associated buffers that provide significant habitat for fish and wildlife.
- B. The City designates the following fish and wildlife habitat conservation areas that meet the above criteria, and this designation does not preclude designation of additional areas as provided in subsection (A) of this section:
 - 1. All regulated streams and wetlands and their associated buffers as determined by a qualified specialist.
 - 2. The waters, bed and shoreline of Puget Sound up to the ordinary high water mark. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 4(B), 2000).

20.80.280 Required buffer areas.

- A. Buffer widths for fish and wildlife habitat areas shall be based on consideration of the following factors: species-specific recommendations of the Washington State Department of Fish and Wildlife; recommendations contained in a habitat management plan submitted by a qualified consultant; and the nature and intensity of land uses and activities occurring on the land adjacent to the site.
- B. Low impact uses and activities which are consistent with the purpose and function of the habitat buffer and do not detract from its integrity may be permitted within the buffer depending on the sensitivity of the habitat area. Examples of uses and activities which may be permitted in appropriate cases include trails that are pervious, viewing platforms, stormwater management facilities such as bio-swales, utility easements and other similar uses and activities; provided, that any impacts to the buffer resulting from such permitted facilities shall be fully mitigated.
- C. Fish and wildlife habitat conservation areas and their associated buffers shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical habitat

and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records and Elections. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 4(C), 2000).

20.80.290 Alteration.

- A. Alterations of fish and wildlife habitat conservation areas shall be avoided, subject to the reasonable use provision section (SMC 20.30.336) or special use permit section (SMC 20.30.333).
- B. Any proposed alterations permitted, consistent with special use or reasonable use review, to fish and wildlife habitat conservation area shall require the preparation of a habitat management plan, consistent with the requirements of the Washington State Department of Fish and Wildlife Priority Habitat Program. The habitat management plan shall be prepared by a qualified consultant and reviewed and approved by the City. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 4(D), 2000).

20.80.300 Mitigation performance standards and requirements.

- A. Relevant performance standards for other critical areas (such as wetlands and streams) that may be located within the fish and wildlife habitat conservation area, as determined by the City, shall be incorporated into mitigation plans.
- B. The following additional mitigation measures shall be reflected in fish and wildlife habitat conservation area mitigation planning:
 - 1. The maintenance and protection of habitat values shall be considered a priority in site planning and design.
 - 2. Buildings and structures shall be located in a manner that preserves and minimizes adverse impacts to important habitat areas. This may include clustering buildings and locating fences outside of habitat areas.
 - 3. Retained habitat shall be integrated into open space and landscaping.
 - 4. Where possible, habitat and vegetated open space shall be consolidated in contiguous blocks.
 - 5. Habitat shall be located contiguous to other habitat areas, open space or landscaped areas both on- and off-site to contribute to a continuous system or corridor that provides connections to adjacent habitat areas.
 - 6. Native species shall be used in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers.
 - 7. The heterogeneity and structural diversity of vegetation shall be emphasized in landscaping.
 - 8. Significant trees, preferably in groups, shall be preserved, consistent with the requirements of Chapter [20.50](#) SMC, Subchapter 5, Tree Conservation, Land Clearing and Site Grading, and with the objectives found in these standards. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 4(E), 2000).

20.80.310 Designation and purpose.

- A. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the Washington State Wetlands Identification and Delineation Manual (Department of Ecology Publication No. 96-94). Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, bio-swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or

highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

- B. Wetlands help to maintain water quality; store and convey stormwater and floodwater; recharge ground water; provide important fish and wildlife habitat; and serve as areas for recreation, education, scientific study and aesthetic appreciation.
- C. The City's overall goal shall be to achieve no net loss of wetlands. This goal shall be implemented through retention of the function, value and acreage of wetlands within the City. Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment, chemical nutrient and toxic pollutants; provide shading to maintain desirable water temperatures; provide habitat for wildlife; protect wetland resources from harmful intrusion; and generally preserve the ecological integrity of the wetland area.
- D. The primary purpose of the wetland regulations is to avoid detrimental wetland impacts and achieve a goal of no net loss of wetland function, value and acreage; and where possible enhance and restore wetlands. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 5(A), 2000).

20.80.320 Classification.

Wetlands, as defined by this section, shall be classified according to the following criteria:

- A. "Type I wetlands" are those wetlands which meet any of the following criteria:
 - 1. The presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical or priority, or the presence of critical or outstanding actual or potential habitat for those species; or
 - 2. Wetlands having 40 percent to 60 percent open water in dispersed patches with two or more wetland subclasses of vegetation; or
 - 3. High quality examples of a native wetland listed in the terrestrial and/or aquatic ecosystem elements of the Washington Natural Heritage Plan that are presently identified as such or are determined to be of heritage quality by the Department of Natural Resources; or
 - 4. The presence of plant associations of infrequent occurrence. These include, but are not limited to, plant associations found in bogs and in wetlands with a coniferous forested wetland class or subclass occurring on organic soils.
- B. "Type II wetlands" are those wetlands which are not Type I wetlands and meet any of the following criteria:
 - 1. Wetlands greater than one acre (43,560 sq. ft.) in size;
 - 2. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size and have three or more wetland classes; or
 - 3. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size, and have a forested wetland class or subclasses.
- C. "Type III wetlands" are those wetlands that are equal to or less than one acre in size and that have one or two wetland classes and are not rated as Type IV wetlands, or wetlands less than one-half acre in size having either three wetlands classes or a forested wetland class or subclass.
- D. "Type IV wetlands" are those wetlands that are equal to or less than 2,500 square feet, hydrologically isolated and have only one, unforested, wetland class. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 5(B), 2000).

20.80.330 Required buffer areas.

- A. Required wetland buffer widths shall reflect the sensitivity of the area and resource or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area. Wetland buffers shall be measured from the wetland edge as delineated and marked in the field using

the 1997 Washington State Department of Ecology Wetland Delineation Manual or adopted successor.

B. Wetland buffers shall be established as follows:

Table 20.80.330B

Wetland Type	Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	115
Type II	115	75
Type III	65	35
Type IV	35	25

- C. The standard buffer width shall be established; provided, that the buffer may be reduced to the minimum buffer listed above if the applicant can demonstrate that a smaller area is adequate to protect the wetland functions and one or both of the following:
1. The proposed use and activities are considered low impact, and may include the following:
 - a. A site layout with no parking, outdoor storage, or use of machinery;
 - b. The proposed use does not involve usage or storage of chemicals; and
 - c. Passive areas are located adjacent to the subject buffer; and
 - d. Both the wetland and its buffer are incorporated into the site design in a manner which eliminates the risk of adverse impact on the subject critical area.
 2. Wetland and buffer enhancement is implemented that will result in equal or greater wetland functions. This includes but is not limited to the following:
 - a. Enhancement of fish and wildlife habitat by incorporating structures that are likely to be used by wildlife, including wood duck houses, bat boxes, nesting platforms, snags, rootwads/stumps, birdhouses, and heron nesting areas.
 - b. Planting native vegetation that would increase value for fish and wildlife habitat, improve water quality, or provide aesthetic/recreational value.
- D. When a wetland has salmonid fish use consistent with SMC [20.80.470](#), the corresponding wetland or stream buffer, whichever is greater, shall be established.
- E. The City may extend the width of the buffer on the basis of site-specific analysis when necessary to achieve the goals of this subchapter.
- F. Wetland buffer widths may be modified by averaging buffer widths as set forth herein. Buffer width averaging shall be allowed only where the applicant demonstrates to the City:
1. The ecological structure and function of the buffer after averaging is equivalent to or greater than the structure and function before averaging;
 2. That the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging;
 3. Buffer averaging will not result in a buffer width being reduced by more than 25 percent of the required buffer as set forth in Table 20.80.330B and in no case may the buffer be less than the stated minimum width.
 4. A habitat survey shall be conducted within the area of concern in order to identify and prioritize highly functional fish and wildlife habitat within the study area.
The City may require buffer averaging to be designed to protect areas of greater sensitivity and function based on the recommendations of a wetland report prepared by a qualified professional.

- G. Low impact uses and activities which are consistent with the purpose and function of the wetland buffer and do not detract from its integrity may be permitted within the buffer depending on the sensitivity of the wetland. Examples of uses and activities which may be permitted in appropriate cases include trails constructed in a manner to reduce impervious surfaces, viewing platforms, and utility easements; provided, that any impacts to the buffer resulting from such permitted activities are fully mitigated. Uses permitted within the buffer shall be located as far from the wetland as possible.
- H. Stormwater management facilities, such as bio-swales, may not be located within the minimum buffer area as set forth in Table 20.80.330B unless it is determined that the location of the facility will enhance the buffer area, and protect the wetland.
- I. A regulated wetland and its associated buffer shall either be placed in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the wetland and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records. (Ord. 469 § 1, 2007; Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 5(C), 2000).

20.80.340 Alteration.

- A. Type I Wetlands. Alterations of Type I wetlands shall be prohibited subject to the reasonable use provisions and special use permit provision of this title.
- B. Type II, III and IV Wetlands.
 - 1. Any proposed alteration and mitigation shall comply with the mitigation performance standards and requirements of these regulations; and
 - 2. No net loss of wetland function and value may occur; and
 - 3. Where enhancement or replacement is proposed, ratios shall comply with the requirements of this subchapter. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 5(D), 2000).

20.80.350 Mitigation performance standards and requirements.

- A. Appropriate Wetland Mitigation Sequence and Actions. Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this subchapter.
- B. Impacts to wetland functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:
 - 1. All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area, or to avoid impacts where avoidance is required by these regulations; and
 - 2. The restored, created or enhanced critical area or buffer will be as available and persistent as the critical area or buffer area it replaces; and
 - 3. In the case of wetlands and streams, no overall net loss will occur in wetland or stream functions and values.
- C. Location and Timing of Wetland Mitigation.
 - 1. Wetland mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.

2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas.
3. In-kind mitigation shall be provided except when the applicant demonstrates and the City concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.
4. Only when it is determined by the City that subsections (C)(1), (2), and (3) of this section are inappropriate and impractical shall off-site, out-of-kind mitigation be considered.
5. When wetland mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water) with a hydrologic connection to the proposed wetland mitigation area to ensure successful development or restoration.
6. Any agreed upon mitigation proposal shall be completed prior to project construction, unless a phased schedule that assures completion concurrent with project construction, has been approved by the City.
7. Wetland acreage replacement ratios shall be as specified in this section.
8. When wetland mitigation is permitted by these regulations, native plant materials salvaged from the original wetland area shall be utilized to the maximum extent possible.

D. Wetland Replacement Ratios.

1. Where wetland alterations are permitted by the City, the applicant shall restore or create areas of wetlands in order to compensate for wetland losses. Equivalent areas shall be determined according to acreage, function, type, location, timing factors and projected success of restoration or creation.
2. When creating or enhancing wetlands, the following acreage replacement ratios shall be used:

Table 20.80.350D

Wetland Type	Wetland Creation Replacement Ratio (Area)	Wetland Enhancement Ratio (Area)
Type I	6:1	16:1
Type II	3:1	12:1
Type III	2:1	8:1
Type IV	1.5:1	6:1

The Department shall have discretion to increase these standards where mitigation is to occur off-site or in other appropriate circumstances based on the recommendations of a wetlands report that includes best available science and is prepared by a qualified professional.

3. Enhanced wetlands shall have higher wetland values and functions than the altered wetland. The values and functions transferred shall be of equal or greater quality to assure no net loss of wetland values and functions.
4. Enhanced and created wetlands shall be appropriately classified and buffered.
5. An enhanced or created wetland and its associated buffer shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City and shall be recorded with the King County Department of Records.

- A. Wetlands Performance Standards. The performance standards in this section shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. In addition, the City may prepare a technical manual which includes guidelines and requirements for report preparation. The following performance standards shall apply to any mitigations proposed within Type I, Type II, Type III and Type IV wetlands and their buffers.
1. Plants indigenous to the region (not introduced or foreign species) shall be used.
 2. Plant selection shall be consistent with the existing or projected hydrologic regime, including base water levels and stormwater event fluctuations.
 3. Plants should be commercially available or available from local sources.
 4. Plant species high in food and cover value for fish and wildlife shall be used.
 5. Mostly perennial species should be planted.
 6. Committing significant areas of the site to species that have questionable potential for successful establishment shall be avoided.
 7. Plant selection must be approved by a qualified consultant.
 8. The following standards shall apply to wetland design and construction:
 - a. Water depth shall not exceed six and one-half feet (two meters).
 - b. The grade or slope that water flows through the wetland shall not exceed six percent.
 - c. Slopes within the wetland basin and the buffer zone shall not be steeper than 3:1 (horizontal to vertical).
 - d. The wetland (excluding the buffer area) should not contain more than 60 percent open water as measured at the seasonal high water mark.
 9. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials.
 10. Planting densities and placement of plants should be determined by a qualified consultant and shown on the design plans.
 11. The planting plan shall be approved by the City.
 12. Stockpiling should be confined to upland areas and contract specifications should limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the City.
 13. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock.
 14. Controlled release fertilizer shall be applied (if required) at the time of planting and afterward only as plant conditions warrant (determined during the monitoring process).
 15. An irrigation system shall be installed, if necessary, for the initial establishment period.
 16. All construction specifications and methods shall be approved by a qualified consultant and the City.
 17. Construction management shall be provided by a qualified consultant. Ongoing work on-site shall be inspected by the City.
- F. Approved Wetland Mitigation Projects – Signature. On completion of construction, any approved mitigation project shall be signed off by the applicant's qualified consultant and approved by the City. Signature of the qualified consultant and approval by the City will indicate that the construction has been completed as planned.
- G. Monitoring Program and Contingency Plan.
1. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met.
 2. A contingency plan shall be established for indemnity in the event that the mitigation project is inadequate or fails. A performance and maintenance bond or other acceptable financial

guarantee is required to ensure the applicant's compliance with the terms of the mitigation agreement. The amount of the performance and maintenance bond shall equal 125 percent of the cost of the mitigation project in addition to the cost for monitoring for a minimum of five years. The bond may be reduced in proportion to work successfully completed over the period of the bond. The bonding period shall coincide with the monitoring period.

3. Monitoring programs prepared to comply with this section shall reflect the following guidelines:
 - a. Scientific procedures shall be used to establish the success or failure of the project.
 - b. For vegetation determinations, permanent sampling points shall be established.
 - c. Vegetative success shall, at a minimum, equal 80 percent survival of planted trees and shrubs and 80 percent cover of desirable understory or emergent plant species at the end of the required monitoring period. Additional standards for vegetative success, including (but not limited to) minimum survival standards following the first growing season, may be required after consideration of a report prepared by a qualified consultant.
 - d. Monitoring reports on the current status of the mitigation project shall be submitted to the City. The reports are to be prepared by a qualified consultant and reviewed by the City or a consultant retained by the City and should include monitoring information on wildlife, vegetation, water quality, water flow, stormwater storage and conveyance, and existing or potential degradation, as applicable, and shall be produced on the following schedule: at the time of construction; 30 days after planting; early in the growing season of the first year; at the end of the growing season of the first year; twice during the second year; and annually thereafter.
 - e. Monitoring programs shall be established for a minimum of five years.
 - f. If necessary, failures in the mitigation project shall be corrected.
 - g. Dead or undesirable vegetation shall be replaced with appropriate plantings.
 - h. Damage caused by erosion, settling, or other geomorphological processes shall be repaired.
 - i. The mitigation project shall be redesigned (if necessary) and the new design shall be implemented and monitored, as in subsection (G)(3)(d) of this section.
 - j. Correction procedures shall be approved by a qualified consultant and the City. (Ord. 581 § 1 (Exh. 1), 2010; Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 5(E), 2000).

20.80.360 Description and purpose.

- A. A flood hazard area consists of the following components: floodplain; flood fringe; zero-rise floodway; and Federal Emergency Management Agency (FEMA) floodway.
- B. It is the purpose of these regulations to ensure that the City of Shoreline meets the requirements of the National Flood Insurance Program and maintains the City as an eligible community for Federal flood insurance benefits.
- C. A tsunami hazard area may be designated as a flood hazard area by the Federal or State government. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(A), 2000).

20.80.370 Classification.

Flood hazard areas shall be determined after obtaining, reviewing and utilizing base flood elevations and available floodway data for a flood having a one percent chance of being equaled or exceeded in any given year, often referred to as the "100-year flood." The base flood is determined for existing conditions, and is shown on Flood Insurance Rate Maps for King County (FIRM) and incorporated areas, current version; or mapped on the King County Sensitive Areas Folio, unless a more complete basin plan including projected flows under future developed conditions has been completed and adopted by the City of Shoreline, in which case these future flow projections shall be used. In areas where the

flood insurance study for the City includes detailed base flood calculations, those calculations may be used. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(B), 2000).

20.80.380 Flood fringe – Development standards and permitted alterations.

- A. Development proposals shall not reduce the effective base flood storage volume of the floodplain. Grading or other activity which would reduce the effective storage volume shall be mitigated by creating compensatory storage on the site or off the site if legal arrangements can be made to assure that the effective compensatory storage volume will be preserved over time.
- B. No structure shall be allowed which would be at risk due to stream bank destabilization including, but not limited to, that associated with channel relocation or meandering.
- C. All elevated construction shall be designed and certified by a professional structural engineer licensed by the State of Washington and the design shall be approved by the City prior to construction.
- D. Subdivisions, short subdivisions, lot line adjustments and binding site plans shall meet the following requirements:
 - 1. New building lots shall contain no less than 5,000 square feet of buildable land outside the zero-rise floodway, and building setback areas shall be shown on the face of the plat to restrict permanent structures to this buildable area;
 - 2. All utilities and facilities such as stormwater facilities, sewer, gas, electrical and water systems shall be located and constructed consistent with the standards and requirements of this section;
 - 3. Base flood data and flood hazard notes shall be shown on the face of the recorded subdivision, short subdivision, lot line adjustment or binding site plan including, but not limited to, the base flood elevation, required flood protection elevations and the boundaries of the floodplain and the zero-rise floodway, if determined; and
 - 4. The following notice shall also be shown on the face of the recorded subdivision, short subdivision, lot line adjustment or binding site plan for all affected lots:

NOTICE

Lots and structures located within Flood Hazard Areas may be inaccessible by emergency vehicles during flood events. Residents and property owners should take appropriate advance precautions.

- E. New residential structures and improvements that include the creation of new impervious surfaces associated with existing residential structures shall meet the following requirements:
 - 1. The lowest floor shall be elevated to the flood protection elevation;
 - 2. Portions of a structure which are below the lowest floor area shall not be fully enclosed. The areas and rooms below the lowest floor shall be designed to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for satisfying this requirement shall meet or exceed the following requirements:
 - a. A minimum of two openings on opposite walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;
 - b. The bottom of all openings shall be no higher than one foot above grade; and
 - c. Openings may be equipped with screens, louvers or other coverings or devices if they permit the unrestricted entry and exit of floodwaters;
 - 3. Materials and methods which are resistant to and minimize flood damage shall be used; and
 - 4. All electrical, heating, ventilation, plumbing, air conditioning equipment and other utility and service facilities shall be floodproofed to or elevated above the flood protection elevation.
- F. New nonresidential structures and substantial improvements of existing nonresidential structures shall meet the following requirements:

1. Elevation.
 - a. Requirements for residential structures contained in subsection (E)(1) of this section shall be met; or
 - b. The structure shall be floodproofed to the flood protection elevation and shall meet the following requirements:
 - i. The applicant shall provide certification by a professional civil or structural engineer licensed by the State of Washington that the floodproofing methods are adequate to withstand the flood depths, pressures, velocities, impacts, uplift forces and other factors associated with the base flood. After construction, the engineer shall certify that the permitted work conforms with the approved plans and specifications; and
 - ii. Approved building permits for floodproofed nonresidential structures shall contain a statement notifying applicants that flood insurance premiums shall be based upon rates for structures which are one foot below the floodproofed level;
 2. Materials and methods which are resistant to and minimize flood damage shall be used; and
 3. All electrical, heating, ventilation, plumbing, air conditioning equipment and other utility and service facilities shall be floodproofed to or elevated above the flood protection elevation.
- G. All new construction shall be anchored to prevent flotation, collapse or lateral movement of the structure.
- H. Utilities shall meet the following requirements:
1. New and replacement utilities including, but not limited to, sewage treatment facilities shall be floodproofed to or elevated above the flood protection elevation;
 2. Aboveground utility transmission lines, other than electric transmission lines, shall only be allowed for the transport of nonhazardous substances; and
 3. Buried utility transmission lines transporting hazardous substances shall be installed at a minimum depth of four feet below the maximum depth of scour for the base flood, as predicted by a professional civil engineer licensed by the State of Washington, and shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.
- I. Critical facilities may be allowed within the flood fringe of the floodplain, but only when no feasible alternative site is available. Critical facilities shall be evaluated through the conditional or special use permit process. Critical facilities constructed within the flood fringe shall have the lowest floor elevated to three or more feet above the base flood elevation. Floodproofing and sealing measures shall be taken to ensure that hazardous substances will not be displaced by or released into floodwaters. Access routes elevated to or above the base flood elevation shall be provided to all critical facilities from the nearest maintained public street or roadway.
- J. Prior to approving any permit for alterations in the flood fringe, the City shall determine that all permits required by State or Federal law have been obtained. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(C), 2000).

20.80.390 Zero-rise floodway – Development standards and permitted alterations.

- A. The requirements which apply to the flood fringe shall also apply to the zero-rise floodway. The more restrictive requirements shall apply where there is a conflict.
- B. A development proposal including, but not limited to, new or reconstructed structures shall not cause any increase in the base flood elevation unless the following requirements are met:
 1. Amendments to the flood insurance rate map are adopted by FEMA, in accordance with 44 CFR 70, to incorporate the increase in the base flood elevation; and
 2. Appropriate legal documents are prepared in which all property owners affected by the increased flood elevations consent to the impacts on their property. These documents shall be filed with the title of record for the affected properties.

- C. The following are presumed to produce no increase in base flood elevation and shall not require a special study to establish this fact:
 - 1. New residential structures outside the FEMA floodway on lots in existence before November 27, 1990, which contain less than 5,000 square feet of buildable land outside the zero-rise floodway and which have a total building footprint of all proposed structures on the lot of less than 2,000 square feet;
 - 2. Substantial improvements of existing residential structures in the zero-rise floodway, but outside the FEMA floodway, where the footprint is not increased; or
 - 3. Substantial improvements of existing residential structures meeting the requirements for new residential structures in this title.
- D. Post or piling construction techniques which permit water flow beneath a structure shall be used.
- E. All temporary structures or substances hazardous to public health, safety and welfare, except for hazardous household substances or consumer products containing hazardous substances, shall be removed from the zero-rise floodway during the flood season from September 30th to May 1st.
- F. New residential structures or any structure accessory to a residential use shall meet the following requirements:
 - 1. The structures shall be outside the FEMA floodway; or
 - 2. The structures shall be on lots in existence before November 27, 1990, which contain less than 5,000 square feet of buildable land outside the zero-rise floodway. Structures shall be designed and situated to minimize encroachment into the zero-rise floodway.
- G. Utilities may be allowed within the zero-rise floodway if the City determines that no feasible alternative site is available, subject to the requirements of this section. Construction of sewage treatment facilities shall be prohibited.
- H. Critical facilities shall not be allowed within the zero-rise floodway except as provided in subsection (I) of this section.
- I. Structures and installations which are dependent upon the floodway may be located in the floodway if the development proposal is approved by all agencies with jurisdiction. Such structures include, but are not limited to:
 - 1. Dams or diversions for water supply, flood control, or fisheries enhancement;
 - 2. Flood damage reduction facilities, such as levees and pumping stations;
 - 3. Stream bank stabilization structures where no feasible alternative exists for protecting public or private property;
 - 4. Stormwater conveyance facilities subject to the development standards for streams and wetlands and the surface water design manual;
 - 5. Boat launches and related recreation structures;
 - 6. Bridge piers and abutments; and
 - 7. Other fisheries enhancement or stream restoration projects. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(D), 2000).

20.80.400 FEMA floodway – Development standards and permitted alterations.

- A. The requirements which apply to the zero-rise floodway shall also apply to the FEMA floodway. The more restrictive requirements shall apply where there is a conflict.
- B. A development proposal including, but not limited to, new or reconstructed structures shall not cause any increase in the base flood elevation.
- C. New residential or nonresidential structures shall be prohibited within the FEMA floodway.
- D. Substantial improvements of existing residential structures in the FEMA floodway, meeting the requirements of WAC 173-158-070, as amended, are presumed to produce no increase in base flood

elevation and shall not require a special study to establish this fact. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(E), 2000).

20.80.410 Flood hazard areas – Certification by engineer or surveyor.

- A. For all new structures or substantial improvements in a flood hazard area, the applicant shall provide certification by a professional civil engineer or land surveyor licensed by the State of Washington of:
 - 1. The actual as-built elevation of the lowest floor, including basement; and
 - 2. The actual as-built elevation to which the structure is floodproofed, if applicable.
- B. The engineer or surveyor shall indicate if the structure has a basement.
- C. The City shall maintain the certifications required by this section for public inspection. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 6(F), 2000).

20.80.420 Description and purpose.

- A. Aquifer recharge areas provide a source of potable water and contribute to stream discharge during periods of low flow. Urban-type pollutants may enter watercourse supplies through potential infiltration of pollutants through the soil to ground water aquifers.
- B. The primary purpose of aquifer recharge area regulations is to protect aquifer recharge areas by providing for regulation of land use activities that pose a risk of potential aquifer contamination and to minimize impacts through the application of strict performance standards. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 7(A), 2000).

20.80.430 Classification.

Aquifer recharge areas shall be classified based on the soil and ground water conditions and risks to surface water during periods of low hydrology. Classification depends on the combined effects of hydrogeological susceptibility to contamination and contaminant loading potential, and includes upland areas underlain by soils consisting largely of silt, clay or glacial till, upland areas underlain by soils consisting largely of sand and gravel, and wellhead protection areas and areas underlain by soils consisting largely of sand and gravel in which there is a predominantly downward or lateral component to ground water flow. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 7(B), 2000).

20.80.440 Alteration.

The following land uses and activities shall require implementation of Best Management Practices (BMPs) as established by the Department of Ecology:

- A. Land uses and activities that involve the use, storage, transport or disposal of significant quantities of chemicals, substances or materials that are toxic, dangerous or hazardous, as those terms are defined by State and Federal regulations.
- B. On-site community sewage disposal systems.
- C. Underground storage of chemicals.
- D. Petroleum pipelines.
- E. Solid waste landfills. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 7(C), 2000).

20.80.450 Performance standards and requirements.

Any uses or activities located in an aquifer recharge area, as defined within this subchapter, that involve the use, storage, transport or disposal of significant quantities of chemicals, substances, or materials that are toxic, dangerous or hazardous, as those terms are defined by State and Federal regulations, shall comply with the following additional standards:

- A. Underground storage of chemicals, substances or materials that are toxic, hazardous or dangerous is discouraged.

- B. Any chemicals, substances or materials that are toxic, hazardous or dangerous shall be segregated and stored in receptacles or containers that meet State and Federal standards.
- C. Storage containers shall be located in a designated, secured area that is paved and able to contain leaks and spills, and shall be surrounded by a containment dike.
- D. Secondary containment devices shall be constructed around storage areas to retard the spread of any spills and a monitoring system should be implemented.
- E. A written operations plan shall be developed, including procedures for loading/unloading liquids and for training of employees in proper materials handling.
- F. An emergency response/spill clean-up plan shall be prepared and employees properly trained to react to accidental spills.
- G. Any aboveground storage tanks shall be located within a diked containment area on an impervious surface. The tanks shall include overfill protection systems and positive controls on outlets to prevent uncontrolled discharges.
- H. Development should be clustered and impervious surfaces limited where possible.
- I. No waste liquids or chemicals of any kind shall be discharged to storm sewers.
- J. All development shall implement Best Management Practices (BMPs) for water quality, as approved by the City, including the standards contained within the City of Shoreline Stormwater Design Manual, such as biofiltration swales and use of oil-water separators, and BMPs appropriate to the particular use proposed. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 7(D), 2000).

20.80.460 Designation and purpose.

- A. Streams are those areas where surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction. A channel or bed need not contain water year-round; provided, that there is evidence of at least intermittent flow during years of normal rainfall.
- B. Stream areas and their associated buffers provide important fish and wildlife habitat and corridors; help to maintain water quality; store and convey stormwater and floodwater; recharge groundwater; and serve as areas for recreation, education and scientific study and aesthetic appreciation.
- C. The primary purpose of the stream area regulations is to avoid impacts to streams and associated riparian corridors and where possible, provide for stream enhancement and rehabilitation. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 8(A), 2000).

20.80.470 Streams.

- A. "Type I streams" are those streams identified as "Shorelines of the State" under the City Shoreline Master Program.
- B. "Type II streams" are those streams that are not Type I streams and are either perennial or intermittent and have one of the following characteristics:
 - 1. Salmonid fish use; or
 - 2. Demonstrated salmonid habitat value as determined by a qualified professional.
- C. "Type III streams" are those streams which are not Type I or Type II streams with perennial (year-round) or intermittent flow with channel width of two feet or more taken at the ordinary high water mark and are not used by salmonid fish.
- D. "Type IV streams," which are not Type I, Type II, or Type III, are those streams with perennial or intermittent flow with channel width less than two feet taken at the ordinary high water mark that are not used by salmonid fish.
- E. "Piped stream segments" are those segments of streams, regardless of their type, that are fully enclosed in an underground pipe or culvert.

- F. For the purposes of this section, “salmonid fish use” and “used by salmonid fish” is presumed for:
1. Streams where naturally recurring use by salmonid populations has been documented by a government agency;
 2. Streams that are fish passable or have the potential to be fish passable by salmonid populations, including those from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Department of Fish and Wildlife; and
 3. Streams that are:
 - a. Planned for restoration in a six-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound.
 - b. Planned removal of the private dams that will result in a fish passable connection to Lake Washington and Puget Sound. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 8(B), 2000).

20.80.480 Required buffer areas.

- A. Required buffer widths shall reflect the sensitivity of the stream type, the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the stream area. Stream buffers shall be measured from the ordinary high water mark (OHWM) or the top of the bank, if the OHWM can not be determined.
- B. The following buffers are established for streams:

Table 20.80.480B

Stream Type	Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	115
Type II	115	75
Type III	65	35
Type IV	35	25
Piped Stream Segments	10	10

- C. The standard buffer width shall be established; provided, that the buffer may be reduced to the minimum buffer listed above if the applicant can demonstrate that a smaller buffer is adequate to protect the stream functions and implements one or more enhancement measures to result in a net improvement to the stream and buffer. The measures determined most applicable and/or appropriate will be considered in reducing buffer requirements. These include but are not limited to:
1. Removal of fish barriers to restore accessibility to anadromous fish.
 2. Enhancement of fish habitat using log structures incorporated as part of a fish habitat enhancement plan.
 3. Enhancement of fish and wildlife habitat structures that are likely to be used by wildlife, including wood duck houses, bat boxes, nesting platforms, snags, rootwads/stumps, birdhouses, and heron nesting areas.
 4. Additional enhancement measures may include:

- a. Planting native vegetation within the buffer area, especially vegetation that would increase value for fish and wildlife, increase stream bank or slope stability, improve water quality, or provide aesthetic/recreational value; or
 - b. Creation of a surface channel where a stream was previously underground, in a culvert or pipe. Surface channels which are “daylighted” shall be located within a buffer area and shall be designed with energy dissipating functions such as meanders to reduce future erosion;
 - c. Removal or modification of existing stream culverts (such as at road crossings) to improve fish passage and flow capabilities; or
 - d. Upgrading of retention/detention facilities or other drainage facilities beyond required levels.
- D. No structures or improvements shall be permitted within the stream buffer area, including buildings, decks, docks, except as otherwise permitted or required under the City’s adopted Shoreline Master Program, or under one of the following circumstances:
1. When the improvements are part of an approved rehabilitation or mitigation plan; or
 2. For the construction of new roads and utilities, and accessory structures, when no feasible alternative location exists; or
 3. The construction of trails over and in the buffer of piped stream segments, and the construction of trails near other stream segments consistent with the following criteria:
 - a. Trails should be constructed of permeable materials;
 - b. Trails shall be designed in a manner that minimizes impact on the stream system;
 - c. Trails shall have a maximum trail corridor width of 10 feet; and
 - d. Trails should be located within the outer half of the buffer, i.e., that portion of the buffer that is farther away from the stream; or
 4. The construction of footbridges; or
 5. The construction and placement of informational signs or educational demonstration facilities limited to no more than one square yard surface area and four feet high, provided there is no permanent infringement on stream flow; or
 6. The establishment of stormwater management facilities, such as bio-swales, over and in the buffer of piped stream segments and when located outside of the minimum buffer area for other stream segments as set forth in the Table 20.80.480B.
- E. The City may extend the width of the buffer on the basis of site-specific analysis when necessary to comply with an adopted basin plan in accordance with City, County, State or Federal plans to preserve endangered or threatened species.
- F. Stream buffer widths may be modified by averaging buffer widths as set forth herein. Buffer width averaging shall be allowed only where the applicant demonstrates to the City:
1. The ecological structure and function of the buffer after averaging is equivalent to or greater than the structure and function before averaging;
 2. That the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging;
 3. Buffer averaging shall not result in the buffer width being reduced by more than 25 percent of the required buffer as set forth in the table in subsection (B) of this section and in no case may the buffer be less than the stated minimum width.
 4. A habitat survey shall be conducted within the area of concern in order to identify and prioritize highly functional fish and wildlife habitat within the study area.

The City may require buffer averaging to be designed to protect areas of greater sensitivity and function based on the recommendations of a stream report prepared by a qualified professional.
- G. Relocation of a Type I, II, or III shall be allowed only when the proposed relocation is part of an approved mitigation or rehabilitation plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream. Relocation of a Type IV stream shall be allowed

only when the proposed relocation will result in equal or better habitat and water quality and will not diminish the flow capacity of the stream.

H. Restoring Piped Watercourses.

1. The City allows the voluntary opening of previously channelized/culverted streams and the rehabilitation and restoration of streams, especially on public property or when a property owner is a proponent in conjunction with new development.
2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 to 25 feet, at the discretion of the Director, to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion, landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City.
3. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a new improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards.
4. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall obtain a written agreement from the affected neighboring property owner. (Ord. 398 § 1, 2006; Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 8(C), 2000).

20.80.490 Alteration.

- A. Bridges shall be used to cross Type I streams. Culverted crossings and other obstructive means of crossing Type I streams shall be prohibited.
- B. Culverts are allowable only under the following circumstances:
 1. Crossing of Type II, III, and IV streams;
 2. When fish passage will not be impaired;
 3. When the following design criteria are met:
 - a. Oversized culverts will be installed;
 - b. Culverts will include gradient controls and creation of pools within the culvert for Type II streams where appropriate; and
 - c. Gravel substrate will be placed in the bottom of the culvert to a minimum depth of one foot for Type II streams;
 4. The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of water and, if applicable, fish.
- C. The City may require that a culvert be removed from a stream as a condition of approval, unless it is demonstrated conclusively that the culvert is not detrimental to fish habitat or water quality, or removal would be detrimental to fish or wildlife habitat or water quality. (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 8(D), 2000).

20.80.500 Mitigation performance standards and requirements.

- A. Appropriate Stream Mitigation Sequence and Actions. Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this section.
- B. Significant adverse impacts to stream area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and

replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:

1. All feasible and reasonable measures will be taken to reduce impacts and losses to the stream, or to avoid impacts where avoidance is required by these regulations; and
2. The restored, created or enhanced stream area or buffer will be available and persistent as the stream or buffer area it replaces; and
3. No overall net loss will occur in stream functions and values.

C. Location and Timing of Stream Mitigation.

1. Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.
2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas.
3. In-kind mitigation shall be provided except when the applicant demonstrates and the City concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.
4. Only when it is determined by the City that subsections (B)(1), (2), and (3) of this section are inappropriate and impractical shall off-site, out-of-kind mitigation be considered.
5. When stream mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, groundwater) with a hydrologic connection to the mitigation area to ensure successful development or restoration.
6. Any agreed upon mitigation proposal shall be completed prior to project construction, unless a phased schedule, that assures completion concurrent with project construction, has been approved by the City.
7. Restored or created streams, where permitted by these regulations, shall be an equivalent or higher stream value or function than the altered stream.

D. The performance standards in this section and the relevant performance standards located within the wetland standards of SMC [20.80.350](#)(E)(1) through (17) shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. In addition, the City may prepare a technical manual which includes guidelines and requirements for report preparation. The performance standards shall apply to any mitigations proposed within Type I, Type II or Type III streams within the City.

E. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified consultant and approved by the City. Signature of the qualified consultant and approval by the City will indicate that the construction has been completed as planned.

F. Monitoring Program and Contingency Plan. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met. The monitoring program will be established consistent with the guidelines contained in SMC [20.80.350](#)(G). (Ord. 398 § 1, 2006; Ord. 238 Ch. VIII § 8(E), 2000).